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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
CENTRAL REEXAMINATION UNIT

DO NOT ENTER DOES NOT COMPLY W/ 1.173

In re Reissue Application of
Johannes H. Megens
Application No. 08/747,873
Filed: November 13, 1996
For: U.S. Patent No. 5,042,103
MOVABLE LOADING BRIDGE HAVING AN INFLATABLE FLEXIBLE BODY

Merged With:
In re Reissue Application of
Johannes H. Megens
Application No. 09/598,785
Filed: June 20, 2000
For: U.S. Patent No. 5,042,103

In re Johannes H. Megens
Reexamination Proceeding
Control No. ~~90/006,053~~
Filed: July 9, 2001
For: U.S. Patent No. 5,042,103

I, Mary Beth Geipel, hereby certify that this correspondence is being deposited with the US Postal Service as first class mail in an envelope addressed to Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date of my signature.

Mary Beth Geipel
Signature

July 28, 2003
Date of Signature

Clean Copy is acceptable in a reissue

LETTER ACCOMPANYING AMENDMENT SUBMITTED UNDER 37 C.F.R. §1.173(c)

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Upon entry of the attached Amendment Submitted Under 37 C.F.R. § 1.173, the status of the claims of the present application is as follows:

Claims 13-15 are pending; and

Claims 1-7, 9-12, and 25-28 are cancelled.

Respectfully submitted,

Glen A. Weitzer
Reg. No. 48,337

Docket No.: 053142-9086-02
Michael Best & Friedrich LLP
100 East Wisconsin Avenue
Milwaukee, Wisconsin 53202-4108
(414) 271-6560

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
CENTRAL REEXAMINATION UNIT

In re Reissue Application of
Johannes H. Megens
Application No. 08/747,873
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Mary Beth Geipel
Signature

July 28, 2003
Date of Signature

AMENDMENT SUBMITTED UNDER 37 C.F.R. §1.173

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Amendment is in response to the Office action dated March 28, 2003. This Amendment is being accompanied by a request for extension of time extending the date for response until July 28, 2003.

In response to the Decision Merging Reexamination and Reissue Proceedings ("Decision"), Applicant submits this Amendment simultaneously with an Express Abandonment for merged Reissue Application No. 09/598,785. Also, Applicant serves a copy of this Amendment and related papers to James A. Flight, the third party requestor, as evidenced by the attached Certification of Service. Applicant respectfully requests the Examiner to consider the following Amendment and remarks.

IN THE SPECIFICATION:

As required under 37 C.F.R. §1.173, this Amendment includes the entire text of each rewritten paragraph being changed. Each replacement paragraph includes brackets to indicate omitted matter and underlining to indicate added matter. As required by §1.173(g), all amendments are identified relative to the patent specification in effect as of the date of filing of this Reissue Application. Although not specifically required by §1.173, a clean copy of the replacement paragraphs is provided in Appendix A for the Examiner's convenience.

NOT ACCEPTABLE

Please replace col. 1, paragraph 1 – col. 4, paragraph 8 with the following:

-- Application No. 09/598,785, filed June 20, 2000, is a continuation of this reissue application which is a continuation of Application No. 08/532,415, filed September 22, 1995, now abandoned.

The present invention relates to a bridge for making a connection between a loading platform and a vehicle, wherein the bridge is hingedly connected to the platform, and wherein the height of the bridge at the side of the vehicle is variable.

Such loading bridges are generally known. Often these loading bridges are driven for their vertical movement through a hydraulic apparatus. In such devices, a cylinder is provided between a fixed point and a point [of] on the bridge, so that the loading bridge can be moved in the vertical direction and can even be locked.

Also, loading bridges are known[,] which are operated by hand, and which rest at the movable side on the loading floor of the vehicle.

All of these known loading bridges have a number of disadvantages[;]. For example, manually operated loading bridges can only be applied until a certain weight, as otherwise they become too heavy and cannot be moved by human power.

Big loading bridges, which often comprise a hydraulic drive, have the disadvantage [,] that these hydraulic [apparatus] devices are rather costly, [so that] thereby making the price of such loading bridges [is] substantial. The same disadvantage [does] also exists [exist] when the loading bridge is driven by an electric motor and a rack and pinion.

The present invention provides [tries to provide] such a loading bridge, which can be provided with a driving mechanism for a relatively modest cost, despite its substantial dimensions.

This aim is achieved, in that under the bridge a flexible body has been provided of which the volume of the flexible body increases when it is filled with a gas.

As the price of such [as] a flexible body is modest, and the filling thereof requires only low priced equipment [, of which the price is low], a rising mechanism for such a bridge is provided, which can be manufactured for a [against] modest cost [costs]. Thus the cost of such a loading bridge [are] is decreased considerably. In this respect, the remark is made [,] that the bridge only has to be lifted in its unloaded condition[;]. Hence [hence] there is no need for substantial power, so that a relatively light and simple pneumatic apparatus is satisfactory.

Subsequently, the present invention will be elucidated with the help of the accompanying drawings, wherein:

FIG. 1: is a schematic perspective view of a closed loading platform comprising a loading bridge;

FIG. 2: is a schematic exploded view of a first embodiment of a loading bridge according to the present invention;

FIG. 3: is a schematic cross-sectional view of the first embodiment of a loading bridge according to the present invention;

FIG. 4: is a schematic perspective view of a second embodiment of a loading bridge according to the present invention;

FIG. 5: is a cross-sectional view of an alternative embodiment for the controlling mechanism of the lid of the loading bridge according to the present invention; and

FIG. 6: is a perspective view partially broken away of a third embodiment of the present invention; and

FIG. 7: is a cross-sectional view, partially as a side view of the embodiment depicted in FIG. 6.

The loading platform 1 depicted in FIG. 1 comprises a pit 2, in which a loading bridge 3 has been provided. In the present case the loading platform 1 is covered [, i.e. that] by a wall 4 [has been provided, wherein] and a roll down shutter 5 which has been provided in the wall at the location of the loading bridge 3.

A vehicle to be loaded, for instance a lorry, drives with its rear side as close as possible against the loading platform 1, wherein the rear side of the lorry hits the buffer 6. Then the roll down shutter 5 is moved upwardly, and the height of the loading bridge 3 is adapted to the height

of the rear side of the lorry, so that the lorry [this] can be loaded easily. It is convenient to drive into the lorry from the loading platform with for instance fork lifts.

FIG. 2 shows an exploded view of such a loading bridge according to the present invention. The loading bridge comprises a housing, which is composed of two fixed sides 7, which have been folded zigzag-wise, and also a rear wall 8. The rear wall comprises reinforcement pieces 9, which are mutually connected through bars 10. When providing such a loading bridge in a loading platform, the loading bridge is located as a whole in a desired position [on the right spot], after which the loading platform is formed in concrete. Thus the sides 7, the rear wall 8, the reinforcement pieces 9 and the bars 10 function as a lost formwork.

The [Into the] housing [thus obtained] supports a base 11 [is provided], which comprises a substantially horizontal part 12 and a part 13 extending obliquely downward to the front at an angle θ of about twenty-two degrees (See FIG. 3). Angle θ as illustrated in FIG. 5 is about fifteen degrees. Also, the bottom of the base 11 comprises a front wall 14 extending obliquely upwardly. The loading bridge per se comprises a movable plate 15, which is manufactured of steel or aluminum[:]. [and to the lower side thereof reinforcement] Reinforcement ribs 16 have been welded to the lower side of the loading bridge. Further, a round rod 17 has been welded to the under side of the plate 15, which rests in an array of substantially L-shaped hooks 18 welded against the back wall 8. Finally, a filling piece 19 has been welded against the lower side of the plate 15[,]. The [which] filling piece 19 can be manufactured from a steel box or may be composed of rather light material, like tempex.

At the lower side of the plate 15, a lid 21 has been hingedly connected by means of hinges 20.

In the space between the filling [falling] piece 19 and the oblique part 13 of the base 11 [bottom], a flexible bag or bellows 22 has been provided, which may be manufactured from for instance polyethylene. The form of this bag is such that it fits in the space thus provided. Further, this bag comprises a connection 23, which fits into a hole 24 provided in the bottom. Through this connection a gas, for instance air, can be supplied [, and] which can fill the bag 22, so that the bridge 15 is raised [rasied] thereby.

The cross-sectional view shown in FIG. 3 shows how the bag 22 is locked up in the space between the oblique [olique] part 13 of the bottom and the filling piece 19. The bag may be connected with the lower side of the filling piece by for instance adhesive or buttons 60. Further,

it is shown how a ventilator 26 can blow up the bag 22 through a tube 25 against the spring pressure of a one-way valve 27. Further, a valve 28 with pressure dependent action has been provided in the tube, which lets a part of the air flow out when the pressure in the bag becomes too high, so that the loading bridge under a changing load, for instance the driving on and off a fork lifter, does not suddenly jump upwardly. Instead of a ventilator, a compressor with a venturi can be used.

Further in the drawing, it is shown how the vehicle lift 29 can be moved from a lorry 30 [until under] to the space under the apparatus, so that it does not interfere the loading and unloading. To avoid wear of the bag during the movement of the loading bridge, the front wall 14 thereof is formed such, that the bag wall rolls off or on, when moving the loading bridge. The same feature has been applied with the side walls[;]. The [the] wall of the bag rolls as a membrane on or off against the side wall 19. Besides this, [these] the side walls 19 serve to protect the bag[,] 22 in the highest position of the loading bridge.

Further, it is shown in this figure how the lid 21, which is connected [connnected] with the bridge 15 by means of a hinge 20, is provided with [of] a rod mechanism 31[, that provides for the fact, that the]. The lid 21 is usually in its inward position, whereas when reaching the highest position of the loading bridge the rod mechanism forces the lid upwardly, so that this is in the position shown with drawn lines in the figure, after which the loading bridge may descend until the position, in which this connects on the loading floor of the lorry 30, and rests on the frame of the lorry or on the loading floor thereof. The lid 21 is kept in this position by a cam 32 welded thereon by a folded rod 33, which is connected with the loading bridge 15 by means of a hinge 34, and a rod 35 connected hingedly with the other side thereof [, which]. The rod 35 thickens [comprises a thickening] 36 at its lower side. [Further this] The rod 35 extends through an aperture [apetture] in the front plate 14.

When reaching the upper position of the loading bridge, the thickening 36 in the rod 35 exerts a force to the folded rod 33, so that the folded rod 33 moves the lid 21 to its extended position. This position is maintained by the cam 32 when the loading bridge moves [moving] downwardly.

In FIG. 4, another embodiment of the loading bridge is shown, in which another plate 15 of the loading bridge [,] is supported by a network of thin metal strips 36 [have been provided, so that] forming a honeycomb-like structure [develops]. This results in a lighter construction of the

reinforcement of the loading bridge, which may considerably reduce the costs thereof. This construction is only allowed because [becuase] the forces of the loading bridge are borne by the whole underside thereof, so that the construction for the concentrating of the forces to one point, which was necessary when using a hydraulic drive, is superfluous. This has of course a very favorable outworking on the price. Further, this loading bridge comprises a rod system 37 and a spring 38, which also provides that during the descending only of the loading bridge the lid 21 is in its extended position. Further, the bag can be made so large, that [is] it pushes directly against the lower side of the bridge and makes the filling piece superfluous.

In this embodiment, a front skirt 52 and side skirts 53 [are provided extending] extend downwardly [form] from the underside of the bridge. When the bag is deflated, it is folded within the front and side skirts, and the front skirt is adjacent the front wall 14. As the bag is inflated, side portions of the bag are played out off of the skirts onto the front wall and the side walls of the housing.

This is further elucidated with the help of FIG. 5. When moving upwardly, the compression spring 38 will urge the rod system 37 outwardly, which is avoided by the cam 39. When the bridge has reached its highest position, the chain 40 will pull [pulll] the rod system 37 downwardly and outwardly, so that the lid 21 is urged to its extended position. During the [following the] descending of the bridge, the rod system 37 will be received by a top 41, which urges the rod system and the spring 38 back to their original positions.

Of course, a lot of other possibilities are available for the controlling [of] the lid 21.

In the embodiment of the loading bridge depicted in [FIG.] FIGS. 6 and 7, the bag 22 has been replaced by a bellows 41, such as an air spring.

The [Besides the] construction of this embodiment of the loading bridge 3 is substantially equal to the embodiment depicted in [FIG.] FIGS. 1-3. The present embodiment is different, because no bag exists and therefore no housing [,] in which the bag 22 is enclosed is necessary [, as there is no question anymore of a bag]. The only reason for nevertheless applying a full housing is the use thereof as lost formwork. This is of course also possible together with the application of a bellows.

A [Instead thereof a] frame 43 is used, of which the plate 15 of the loading bridge is provided hingedly, in a way substantially as in the first embodiment. For bearing the load of the frame on the base, two brackets 44 have been provided. Further, in this embodiment, the plate

15 is reinforced by spars 42. The bellows rests with its bottom on the horizontal part of the bracket 44, whereas the top thereof is connected with a plate 45, being connected with the two middle spars 42.

Further the side wall of the loading bridge is composed of plates 19, which avoid [,] that part of the body that becomes [become] squeezed between the frame and the bridge.

[Besides the] The construction of the [bellow] bellows is depicted in FIG. 7. The bellows 41 comprises a bottom plate 46, which is connected on the horizontal part 44 through an intermediate piece 47. The bellows per se, which is composed of a flexible bag 48, for instance made of rubber or of plastic, is connected with the base plate 46 and a top plate 49. To avoid extension of the bag 48 in the horizontal direction, two rings 50 have [ve] been provided.

Through a pipe 51[,] extending through the intermediate piece 47 and the base plate 46, a gas, for instance air, can be supplied to make the volume of the bag 48 increase. In view of the supply of air or a gas, refer [referred is] to the embodiment described with the help of FIG. 3. [Besides several] Several features of the different embodiments can be mutually combined.--

IN THE CLAIMS:

Although not specifically required by §1.173, a copy of the pending claims is provided in Appendix B to clearly identify all of the changes made to the pending claims by this and prior Amendments relative to the original patent.

Please cancel claims 1-7, 9-12, and 25-28 without prejudice.

IN THE DRAWINGS:

Applicant is submitting herewith formal drawings in accordance with 37 C.F.R. §1.84.

REMARKS

In this Amendment, Applicant cancels claims 1-7, 9-12, and 25-28 such that claims 13-15 are pending in this application. Applicant initially notes with appreciation that claims 13-15 have been allowed.

Drawing Objections

The Examiner objects to the drawings for failing to show every feature of the invention specified in the claims. Specifically, the Examiner identifies that either Applicant should show the base inclined eighty-nine degrees in the drawings or cancel this limitation from the claim. Applicant has cancelled claims 25-27, which recited the inclination angle of the base. Accordingly, Applicant respectfully requests the Examiner to withdraw the objection to the drawings.

In response to Examiner's approval of the drawing correction filed June 3, 2002, Applicant submits formal drawings in compliance with 37 C.F.R. §1.84.

Disclosure Objections

The Examiner objects to the disclosure because the Examiner states that the specification is replete with grammatical errors, misspellings, and is written in a generally awkward manner. Applicant points out that the specification, as previously amended, is sufficiently clear to appraise one of ordinary skill of the nature of the invention. Nevertheless, Applicant again amends the specification to correct the examples cited by the Examiner and to correct other errors in order to clarify the disclosure. Applicant respectfully requests that the Examiner withdraw the objection to the disclosure in light of the Applicant's amendments to the specification.

Claim Rejections 35 U.S.C. §112

The Examiner rejects claims 25-27 under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor had possession of the invention at the time the application was filed.

Claims 25-27 are no longer pending in this application, and therefore this rejection is no longer relevant.

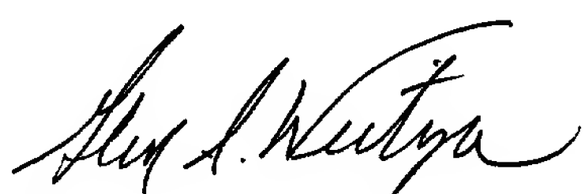
Claim Rejections 35 U.S.C. §103(a)

The Examiner rejects claims 1, 2, 12, and 25-27 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,659,899 ("Phillips") in view of the owner's manual of a dock leveler to Kelley dated 5/10/78 ("Kelley"). The Examiner also rejects: (i) claim 3 under 35 U.S.C. §103(a) as being unpatentable over Phillips in view of Kelley and further in view of U.S. Patent No. 3,822,861 ("Scott"); (ii) claim 4 under 35 U.S.C. §103(a) as being unpatentable over Phillips in view of Kelley and further in view of Australian Patent No. 588734 ("Beer"); (iii) claims 6 and 7 under 35 U.S.C. §103(a) as being unpatentable over Phillips in view of Kelley and further in view of U.S. Patent No. 3,784,255 ("Smock"); and (iv) claims 9-11 and 28 under 35 U.S.C. §103(a) as being unpatentable over Phillips in view of Kelley and further in view of U.S. Patent No. 3,902,213 ("Phleger").

Claims 1-4, 6, 7, 9-12, and 25-28 are no longer pending in this application, and therefore these rejections are no longer relevant.

The Examiner is invited to contact the undersigned attorney should the Examiner have questions regarding the above.

Respectfully submitted,



Glen A. Weitzer
Reg. No. 48,337

File No. 53142-9086-02
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APPENDIX A

Clean Version of the Replacement Paragraphs for the Specification

Application No. 09/598,785, filed June 20, 2000, is a continuation of this reissue application which is a continuation of Application No. 08/532,415, filed September 22, 1995, now abandoned.

The present invention relates to a bridge for making a connection between a loading platform and a vehicle, wherein the bridge is hingedly connected to the platform, and wherein the height of the bridge at the side of the vehicle is variable.

Such loading bridges are generally known. Often these loading bridges are driven for their vertical movement through a hydraulic apparatus. In such devices, a cylinder is provided between a fixed point and a point on the bridge, so that the loading bridge can be moved in the vertical direction and can even be locked.

Also, loading bridges are known which are operated by hand, and which rest at the movable side on the loading floor of the vehicle.

All of these known loading bridges have a number of disadvantages. For example, manually operated loading bridges can only be applied until a certain weight, as otherwise they become too heavy and cannot be moved by human power.

Big loading bridges, which often comprise a hydraulic drive, have the disadvantage that these hydraulic devices are rather costly, thereby making the price of such loading bridges substantial. The same disadvantage also exists when the loading bridge is driven by an electric motor and a rack and pinion.

The present invention provides such a loading bridge, which can be provided with a driving mechanism for a relatively modest cost, despite its substantial dimensions.

This aim is achieved, in that under the bridge a flexible body has been provided of which the volume of the flexible body increases when it is filled with a gas.

As the price of such a flexible body is modest, and the filling thereof requires only low priced equipment, a rising mechanism for such a bridge is provided, which can be manufactured for a modest cost. Thus the cost of such a loading bridge is decreased considerably. In this respect, the remark is made that the bridge only has to be lifted in its unloaded condition. Hence there is no need for substantial power, so that a relatively light and simple pneumatic apparatus is satisfactory.

Subsequently, the present invention will be elucidated with the help of the accompanying drawings, wherein:

FIG. 1: is a schematic perspective view of a closed loading platform comprising a loading bridge;

FIG. 2: is a schematic exploded view of a first embodiment of a loading bridge according to the present invention;

FIG. 3: is a schematic cross-sectional view of the first embodiment of a loading bridge according to the present invention;

FIG. 4: is a schematic perspective view of a second embodiment of a loading bridge according to the present invention;

FIG. 5: is a cross-sectional view of an alternative embodiment for the controlling mechanism of the lid of the loading bridge according to the present invention; and

FIG. 6: is a perspective view partially broken away of a third embodiment of the present invention; and

FIG. 7: is a cross-sectional view, partially as a side view of the embodiment depicted in FIG. 6.

The loading platform 1 depicted in FIG. 1 comprises a pit 2, in which a loading bridge 3 has been provided. In the present case the loading platform 1 is covered by a wall 4 and a roll down shutter 5 which has been provided in the wall at the location of the loading bridge 3.

A vehicle to be loaded, for instance a lorry, drives with its rear side as close as possible against the loading platform 1, wherein the rear side of the lorry hits the buffer 6. Then the roll down shutter 5 is moved upwardly, and the height of the loading bridge 3 is adapted to the height of the rear side of the lorry, so that the lorry can be loaded easily. It is convenient to drive into the lorry from the loading platform with for instance fork lifts.

FIG. 2 shows an exploded view of such a loading bridge according to the present invention. The loading bridge comprises a housing, which is composed of two fixed sides 7, which have been folded zigzag-wise, and also a rear wall 8. The rear wall comprises reinforcement pieces 9, which are mutually connected through bars 10. When providing such a loading bridge in a loading platform, the loading bridge is located as a whole in a desired position, after which the loading platform is formed in concrete. Thus the sides 7, the rear wall 8, the reinforcement pieces 9 and the bars 10 function as a lost formwork.

The housing supports a base 11, which comprises a substantially horizontal part 12 and a part 13 extending obliquely downward to the front at an angle θ of about twenty-two degrees (See FIG. 3). Angle θ as illustrated in FIG. 5 is about fifteen degrees. Also, the bottom of the base 11 comprises a front wall 14 extending obliquely upwardly. The loading bridge per se comprises a movable plate 15, which is manufactured of steel or aluminum. Reinforcement ribs 16 have been welded to the lower side of the loading bridge. Further, a round rod 17 has been welded to the under side of the plate 15, which rests in an array of substantially L-shaped hooks 18 welded against the back wall 8. Finally, a filling piece 19 has been welded against the lower side of the plate 15. The filling piece 19 can be manufactured from a steel box or may be composed of rather light material, like tempex.

At the lower side of the plate 15, a lid 21 has been hingedly connected by means of hinges 20.

In the space between the filling piece 19 and the oblique part 13 of the base 11, a flexible bag or bellows 22 has been provided, which may be manufactured from for instance polyethylene. The form of this bag is such that it fits in the space thus provided. Further, this bag comprises a connection 23, which fits into a hole 24 provided in the bottom. Through this connection a gas, for instance air, can be supplied which can fill the bag 22, so that the bridge 15 is raised thereby.

The cross-sectional view shown in FIG. 3 shows how the bag 22 is locked up in the space between the oblique part 13 of the bottom and the filling piece 19. The bag may be connected with the lower side of the filling piece by for instance adhesive or buttons 60. Further, it is shown how a ventilator 26 can blow up the bag 22 through a tube 25 against the spring pressure of a one-way valve 27. Further, a valve 28 with pressure dependent action has been provided in the tube, which lets a part of the air flow out when the pressure in the bag becomes too high, so that the loading bridge under a changing load, for instance the driving on and off a fork lifter, does not suddenly jump upwardly. Instead of a ventilator, a compressor with a venturi can be used.

Further in the drawing, it is shown how the vehicle lift 29 can be moved from a lorry 30 to the space under the apparatus, so that it does not interfere the loading and unloading. To avoid wear of the bag during the movement of the loading bridge, the front wall 14 thereof is formed such, that the bag wall rolls off or on, when moving the loading bridge. The same feature has

been applied with the side walls. The wall of the bag rolls as a membrane on or off against the side wall 19. Besides this, the side walls 19 serve to protect the bag 22 in the highest position of the loading bridge.

Further, it is shown in this figure how the lid 21, which is connected with the bridge 15 by means of a hinge 20, is provided with a rod mechanism 31. The lid 21 is usually in its inward position, whereas when reaching the highest position of the loading bridge the rod mechanism forces the lid upwardly, so that this is in the position shown with drawn lines in the figure, after which the loading bridge may descend until the position, in which this connects on the loading floor of the lorry 30, and rests on the frame of the lorry or on the loading floor thereof. The lid 21 is kept in this position by a cam 32 welded thereon by a folded rod 33, which is connected with the loading bridge 15 by means of a hinge 34, and a rod 35 connected hingedly with the other side thereof. The rod 35 thickens 36 at its lower side. The rod 35 extends through an aperture in the front plate 14.

When reaching the upper position of the loading bridge, the thickening 36 in the rod 35 exerts a force to the folded rod 33, so that the folded rod 33 moves the lid 21 to its extended position. This position is maintained by the cam 32 when the loading bridge moves downwardly.

In FIG. 4, another embodiment of the loading bridge is shown, in which another plate 15 of the loading bridge is supported by a network of thin metal strips 36 forming a honeycomb-like structure. This results in a lighter construction of the reinforcement of the loading bridge, which may considerably reduce the costs thereof. This construction is only allowed because the forces of the loading bridge are borne by the whole underside thereof, so that the construction for the concentrating of the forces to one point, which was necessary when using a hydraulic drive, is superfluous. This has of course a very favorable outworking on the price. Further, this loading bridge comprises a rod system 37 and a spring 38, which also provides that during the descending only of the loading bridge the lid 21 is in its extended position. Further, the bag can be made so large, that it pushes directly against the lower side of the bridge and makes the filling piece superfluous.

In this embodiment, a front skirt 52 and side skirts 53 extend downwardly from the underside of the bridge. When the bag is deflated, it is folded within the front and side skirts,

and the front skirt is adjacent the front wall 14. As the bag is inflated, side portions of the bag are played out off of the skirts onto the front wall and the side walls of the housing.

This is further elucidated with the help of FIG. 5. When moving upwardly, the compression spring 38 will urge the rod system 37 outwardly, which is avoided by the cam 39. When the bridge has reached its highest position, the chain 40 will pull the rod system 37 downwardly and outwardly, so that the lid 21 is urged to its extended position. During the descending of the bridge, the rod system 37 will be received by a top 41, which urges the rod system and the spring 38 back to their original positions.

Of course, a lot of other possibilities are available for the controlling the lid 21.

In the embodiment of the loading bridge depicted in FIGS. 6 and 7, the bag 22 has been replaced by a bellows 41, such as an air spring.

The construction of this embodiment of the loading bridge 3 is substantially equal to the embodiment depicted in FIGS. 1-3. The present embodiment is different, because no bag exists and therefore no housing in which the bag 22 is enclosed is necessary. The only reason for nevertheless applying a full housing is the use thereof as lost formwork. This is of course also possible together with the application of a bellows.

A frame 43 is used, of which the plate 15 of the loading bridge is provided hingedly, in a way substantially as in the first embodiment. For bearing the load of the frame on the base, two brackets 44 have been provided. Further, in this embodiment, the plate 15 is reinforced by spars 42. The bellows rests with its bottom on the horizontal part of the bracket 44, whereas the top thereof is connected with a plate 45, being connected with the two middle spars 42.

Further the side wall of the loading bridge is composed of plates 19, which avoid that part of the body that becomes squeezed between the frame and the bridge.

The construction of the bellows is depicted in FIG. 7. The bellows 41 comprises a bottom plate 46, which is connected on the horizontal part 44 through an intermediate piece 47. The bellows per se, which is composed of a flexible bag 48, for instance made of rubber or of plastic, is connected with the base plate 46 and a top plate 49. To avoid extension of the bag 48 in the horizontal direction, two rings 50 have been provided.

Through a pipe 51 extending through the intermediate piece 47 and the base plate 46, a gas, for instance air, can be supplied to make the volume of the bag 48 increase. In view of the supply of air or a gas, refer to the embodiment described with the help of FIG. 3.

Several features of the different embodiments can be mutually combined.

APPENDIX B

Pending Claims Marked Relative to the Original Patent

13. Loading bridge for making a connection between a loading platform and vehicle, comprising:

a substantially planar member pivotally connected to the loading platform and capable of bearing a load, wherein a rear edge portion of said substantially planar member is hinged along a surface of the loading platform, and wherein a front edge is movable in a direction substantially perpendicular to said surface of the loading platform;

a base positioned under said planar member;

pivot means for pivoting said substantially planar member, said pivot means comprising an inflatable flexible body; and

means for inflating said inflatable flexible body, said means for inflating including a ventilator positioned under said base.

14. A loading bridge as claimed in claim 13, wherein said base includes a hole for allowing communication between said inflatable flexible body and said ventilator.

15. A loading bridge as claimed in claim 13, wherein said inflatable flexible body includes an opening in a bottom portion for allowing communication with said ventilator.

CERTIFICATION OF SERVICE

As required under 37 C.F.R. § 1.550(f), the undersigned certifies that a copy of this correspondence, including all accompanying documents, is being deposited with the U.S. Postal Service as first class mail, on the date of the signature below, in an envelope addressed to Requester:

James A. Flight
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July 28, 2003
Date

Mary Beth Geipel
Mary Beth Geipel